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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/727,513	12/04/2000	Sang-Jin Lee	P56254	5550

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EXAMINER

CHAI, LONGBIT

ART UNIT	PAPER NUMBER
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2131

DATE MAILED: 06/25/2004

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Supplemental
Office Action Summary

Application No.

09/727,513

Applicant(s)

LEE, SANG-JIN

Examiner

Longbit Chai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for priority under 35 U.S.C. 119(a)-(d) based upon an application filed in Korea on December 2, 1999. Therefore, the effective filing date for the subject matter defined in the pending claims in this application is 12/2/1999.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 29 of such treaty in the English language.

2. Claims 11 – 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Lay (Patent Number: 6098158), hereinafter referred to as Lay.

3. As per claim 11, Lay teaches a method for booting a computer, comprising the steps of:

a. providing a central processing unit (CPU) having an instruction pointer and a memory for storing a boot image and a main memory; reading out said boot image;

loading said boot image into said main memory (Lay: see for example, Figure 1, Column 4 Line 1 – 40 and Column 1 Line 18 – 21);

b. setting said instruction pointer of said CPU to point to said boot image in main memory; and executing an operating system by reading out said boot image from main memory (Lay: see for example, Column 1 Line 21 – 23).

4. As per claim 12, Lay teaches the claimed invention as described above (see claim 11). Lay further teaches said memory for storing said boot image prior to reading out said boot image being a boot image memory (Lay: see for example, Column 1 Line 61 – 62).

5. As per claim 13, Lay teaches the claimed invention as described above (see claim 11). Lay further teaches said memory for storing said boot image prior to reading out said boot image being a compact disk read only memory (CD-ROM) (Lay: see for example, Column 6 Line 33).

6. As per claim 14, Lay teaches the claimed invention as described above (see claim 11). Lay further teaches said boot image is accomplished when said boot image is in a compressed format (Lay: see for example, Column 1 Line 53).

7. As per claim 15, Lay teaches the claimed invention as described above (see claim 14). Lay further teaches decompressing said boot image after said compressed boot image is read out (Lay: see for example, Column 6 Line 53: The compressed boot image must be decompressed before the execution after read out – i.e., the decompression is considered as the inherited feature of compression technique).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1 – 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lay (Patent Number: 6098158), hereinafter referred to as Lay, in view of Oka (Patent Number: 5448741), hereinafter referred to as Oka.
9. As per claim 1, Lay teaches a computer, comprising:
 - a. a central processing unit ((Lay: see for example, Column 1 Line 27 – 28 and Figure 2);
10. Lay does not teach a main and/or auxiliary power supply for supplying main and/or auxiliary power of the computer.
11. Oka teaches:
 - b. a main and/or auxiliary power supply for supplying main and/or auxiliary power of the computer (Oka: see for example, Column 3 Line 23 – 27 and Figure 1 Element 29 and 31);
12. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Oka within the system of Lay because Oka discloses a computer system architecture equipped with an intelligent power supply

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failure situations to resolve the problem disclosed by Lay – The detail will be described as follows. First, Lay teaches a software-enabled fast boot mechanism that stores and restores the boot image at any given system state (Lay: see for example, Column 3 Line 2 – 5) to reduce the booting time. Lay teaches storage of the boot image is not restricted to any particular location in disk storage. Rather, the boot image is dynamically relocatable as necessary for memory management (Lay: see for example, Column 2 Line 36 – 39). It may be easier or faster for the system to be restored from one particular image over another one (Lay: see for example, Column 4 Line 38 – 40). Furthermore, Lay discloses the method to reduce the boot time by saving and booting the image from the computer's physical memory (e.g., RAM) (Lay: see for example, Column 1 Line 53 – 58). However, Lay also discloses the issue of this approach is that the boot image is lost once the system is powered down (Lay: see for example, Column 1 Line 56 – 58). The most obvious solution is evidently using a intelligent power supply to prevent the data stored in the RAM from vanishing even if the power switch of the computer is turned off (Oka: see for example, Column 3 Line 23 – 27).

13. As a result, the modification would have been obvious, as taught by Lay, because one of ordinary skill in the art would have been motivated to load (or store) the boot image into the main memory before the powered down to reduce booting time (instead of restoring the boot image from the system disk at power-on) considering the performance as the preferred option (i.e. reducing booting time) regardless the higher cost of hardware modifications to support the intelligent power supply system.

c. a boot image storing device for storing a boot image of the computer (Oka: see for example, Column 3 Line 21 – 22);

14. Oka does not teach a main memory for storing the boot image from the boot image storing device by receiving the auxiliary power when the main power is shut off.

15. Lay teaches:

d. a main memory for storing the boot image from the boot image storing device by receiving the auxiliary power when the main power is shut off (Lay: see for example, Column 1 Line 61 – 62 and Column 3 Line 4: Lay discloses a method of fast booting to store the image in non-volatile storage (e.g., RAM) (Lay: see for example, Column 1 Line 61 – 62). Lay also teaches the system can be stored and restored to any given state of boot image that evidently includes the initial state where the boot image must be obtained by reading out from the boot image storing device (Lay: see for example, Column 3 Line 4). Lay does not expressly teach storing the read boot image to the main memory. Lay teaches storing the image in non-volatile storage (e.g., RAM). (Lay: see for example, Column 1 Line 61 – 62). However, It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the boot image storing location from the non-volatile memory to main memory because the main memory now provides equivalent capability as the non-volatile memory does and the data stored in the RAM would not vanish after powered down (Oka: see for example, Column 3 Line 24 – 26). This further implies the scenario occurred when shutting off the main power equipped with the intelligent power supply with backup auxiliary power

so that fast booting from the direct access physical memory can be achieved as taught by Lay).

16. Lay as modified further teaches:

e. a composition memory for setting an instruction pointer of the central processing unit to a specific region of the main memory storing the boot image, wherein the central processing unit loads the boot image from the specific region of the main memory in response to the instruction pointer, allowing an operating system program can perform control functions (Oka: see for example, Column 3 Line 1, Column 3 Line 19 – 22 and Column 5 Line 20 – 22: The boot image must be loaded into memory and executed before the operation system starts).

17. As per claim 7, Lay teaches a method for powering down a computer receiving main and auxiliary power, the method comprising the steps of:

a. providing a central processing unit, a main memory, a basic input/output system memory and a boot image storing device (Lay: see for example, Column 1 Line 27 – 28 and Figure 2: These components are inherited from a computer system running OS/2);

18. Lay does not teach determining whether the computer is powered down. This feature is

b. Oka teaches determining whether the computer is powered down (Oka: see for example, Column 3 Line 10 – 12, Column 4 Line 13 – 18 and Figure 1 Element 29 and 31: This feature is inherited from the intelligent power supply taught by Oka so that the battery can backup when the event of the system powered down is detected).

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19. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Oka within the system of Lay because Oka discloses a computer system architecture equipped with an intelligent power supply providing advanced power management capability to handle powered down or power failure situations to resolve the problem disclosed by Lay – The detail will be described as follows. First, Lay teaches a software-enabled fast boot mechanism that stores and restores the boot image at any given system state (Lay: see for example, Column 3 Line 2 – 5) to reduce the booting time. Lay teaches storage of the boot image is not restricted to any particular location in disk storage. Rather, the boot image is dynamically relocatable as necessary for memory management (Lay: see for example, Column 2 Line 36 – 39). It may be easier or faster for the system to be restored from one particular image over another one (Lay: see for example, Column 4 Line 38 – 40). Furthermore, Lay discloses the method to reduce the boot time by saving and booting the image from the computer's physical memory (e.g., RAM) (Lay: see for example, Column 1 Line 53 – 58). However, Lay also discloses the issue of this approach is that the boot image is lost once the system is powered down (Lay: see for example, Column 1 Line 56 – 58). The most obvious solution is evidently using a intelligent power supply to prevent the data stored in the RAM from vanishing even if the power switch of the computer is turned off (Oka: see for example, Column 3 Line 23 – 27).

20. As a result, the modification would have been obvious, as taught by Lay, because one of ordinary skill in the art would have been motivated to load (or store) the boot image into the main memory before the powered down to reduce booting time

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(instead of restoring the boot image from the system disk at power-on) considering the performance as the preferred option (i.e. reducing booting time) regardless the higher cost of hardware modifications to support the advanced power management system.

c. Lay further teaches reading out a boot image from the boot image device (Lay: see for example, Column 1 Line 61 – 62 and Column 3 Line 4: See the same rationale in rejecting the claim 1 (d) – repeated as follows. Lay discloses a method of fast booting to store the image in non-volatile storage (e.g., RAM) (Lay: see for example, Column 1 Line 61 – 62). Lay also teaches the system can be stored and restored to any given state of boot image that evidently includes the initial state where the boot image must be obtained by reading out from the boot image storing device (Lay: see for example, Column 3 Line 4). Lay does not expressly teach storing the read boot image to the main memory. Lay teaches storing the image in non-volatile storage (e.g., RAM) (Lay: see for example, Column 1 Line 61 – 62). However, It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the boot image storing location from the non-volatile memory to main memory because the main memory now provides equivalent capability as the non-volatile memory does and the data stored in the RAM would not vanish after powered down (Oka: see for example, Column 3 Line 24 – 26). This further implies the scenario occurred when shutting off the main power equipped with the intelligent power supply with backup auxiliary power so that fast booting from the direct access physical memory can be achieved as taught by Lay).

d. Lay further teaches storing the read boot image to the main memory (Lay: see for example, Column 1 Line 61 – 62: Lay teaches storing the image in non-volatile storage (e.g., RAM). Lay does not expressly teach storing the read boot image to the main memory. However, It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the boot image storing location from the non-volatile memory to main memory because the main memory now provides equivalent capability as the non-volatile memory does and the data stored in the RAM would not vanish after powered down (Oka: see for example, Column 3 Line 24 – 26).

21. Lay as modified further teaches:

e. supplying the auxiliary power to the main memory; and shutting off the main power.

22. See the same rationale in rejecting the claim 1 (d).

23. As per claim 10, Lay teaches a method for powering on a computer receiving main and auxiliary power, the method comprising the steps of:

a. providing a central processing unit with an instruction pointer,

24. Lay does not teach a main memory storing a boot image by receiving the auxiliary power when the main power is shut off, and a basic input/output system memory setting the instruction pointer.

25. Lay as modified teaches:

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b. a main memory storing a boot image by receiving the auxiliary power when the main power is shut off (See the same rationale applies here as above in rejecting the claim 1 (d) and the claim 7 (b) – (e)).

26. Lay as modified teaches:

c. a basic input/output system memory setting the instruction pointer (Oka: see for example, Column 2 Line 68, Figure 1, Column 3 Line 23 – 27 and Column 3 Line 1, and Figure 1 Element 12);

d. checking initializing steps and faults of the hardware components of the computer (Oka: see for example, Column 6 Line 60 – 61);

e. setting the instruction pointer of the central processing unit to a boot image storing region of the main memory; and executing an operating system program by reading out the boot image from the boot image storing region of the main memory (Oka: see for example, Column 3 Line 19 – 22 and Column 5 Line 20 – 22: The boot image must be loaded into memory and executed before the operation system starts).

27. As per claim 2, Lay as modified teaches the claimed invention as described above (see claim 1). Lay as modified further teaches the auxiliary power supply is composed of alternative one of a battery and a suspend voltage supplying unit of the main power supply (Oka: see for example, Column 3 Line 10 – 12, Column 4 Line 13 – 18 and Figure 1 Element 29 and 31).

28. As per claim 3, Lay as modified further teaches the claimed invention as described above (see claim 1). Lay as modified further teaches the boot image storing device is a hard disk drive (Oka: see for example, Column 3 Line 21 – 22).

29. As per claim 4, Lay as modified teaches the claimed invention as described above (see claim 1). Lay as modified teaches the boot image storing device is a non-volatile memory device (Lay: see for example, Column 1 Line 61 – 62).

30. As per claim 5, Lay as modified teaches the claimed invention as described above (see claim 1). Lay as modified teaches the boot image storing device is a compact disk drive (Lay: see for example, Column 1 Line 33).

31. As per claim 6, Lay as modified teaches the claimed invention as described above (see claim 1). Lay as modified further teaches said composition memory is a BIOS ROM (Basic Input Output System Read Only Memory) (Oka: see for example, Column 3 Line 1 and Figure 1 Element 12).

32. As per claim 8, Lay as modified teaches the claimed invention as described above (see claim 7). Lay further teaches reading out a boot image from the boot image storing device is accomplished according to an initial state of the main memory (Lay: see for example, Column 3 Line 2 – 5; Lay teaches it can be accomplished according to any given state of the memory. This covers the initial state of the main memory).

33. As per claim 9, Lay as modified teaches the claimed invention as described above (see claim 7). Lay further teaches reading out a boot image from the boot image storing device is accomplished when the computer is powered down (Lay: see for example, Column 1 Line 63 – 64).

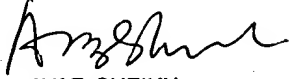
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Longbit Chai whose telephone number is 703-305-0710. The examiner can normally be reached on Monday-Friday 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R Sheikn can be reached on 703-305-9648. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Longbit Chai
Examiner
Art Unit 2131

LBC


AYAZ SHEIKH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100